TROPICAL RAINFALL MEASURING MISSION

March 6, 2000 - March 12, 2000
DOY 066 - 072
Day of Mission 830 - 836

TRMM MISSION OPERATIONS

- TRMM is flying in the +X Forward direction as of 00-067, at 23:25:17z.
- Yaw maneuver #39 is scheduled for March 31st (00-091).
- Delta-V maneuver #171 is scheduled for March 15th (00-075), using the LBS thrusters.
- The Beta angle range for 00-073 through 079 is +20.8° to +34.5°.
- The next Monthly Status Review is scheduled for 00-095.
- The next CCB meeting is scheduled for 00-094.

TRMM SUBSYSTEM OPERATIONS

Attitude Control System (ACS)

Delta-V maneuver #168 was successfully conducted on 00-066 at 16:31:03z and 17:15:00z for durations of 45.250 and 24.875 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 36.2% and 31.7% (63.8% and 68.3% on time). The remaining fuel is 619.172 kg, and the final apogee and perigee height is 354.75 km x 347.55 km.

A 180° Yaw Maneuver to +X Forward was successfully conducted on 00-067 at 23:25:17z.

Delta-V maneuver #169 was successfully conducted on 00-069 at 16:02:13z and 16:48:03z for durations of 46.000 and 31.750 seconds respectively, using the LBS thrusters. The off-modulation of the -Yaw thruster for burn 1 was 7.9% (92.1% on time). The off-modulation of the +Pitch thruster (#2) for burn 1 and 2 was 21.7% and 21.7% (78.3% and 78.3% on time). The remaining fuel is 617.317 kg, and the final apogee and perigee height is 354.73 km x 347.51 km.

Due to the timing between the off-modulation and termination of the burns for maneuver #169, the Yaw updates afterwards were the largest experienced to date (0.97° and 1.44°).

Delta-V maneuver #170 was successfully conducted on 00-072 at 15:41:55z and 16:28:02z for durations of 43.625 and 26.625 seconds respectively, using the LBS thrusters. The off-modulation of the -Yaw thruster for burn 1 was 8.3% (91.7% on time). The off-modulation of the +Pitch thruster (#2) for burn 1 and 2 was 23.5% and 25.8% (76.5% and 74.2% on time). The remaining fuel is 615.653 kg, and the final apogee and perigee height is 354.60 km x 347.58 km.

The ESA experienced Moon interference in quadrants 2 and 4 on 00-069 through 00-072. ACS performed nominally during the transitions between 3 and 4 head control.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard value is x'78A' with a current drift rate of -2.3 µs/hr. The UTCF was adjusted by -858 µs at 00-072/23:50:37z. The new UTCF value is 31535996.848502 seconds with a current drift value of 0 µs.

EDAC multi-bit errors occurred on 00-067 at 18:49:40z, 00-071 at 10:55:20z, and 00-073 at 04:52:03z, 18:40:15z, and 18:59:38z.

Q-channel restarts occurred on 00-067 at 09:48:55z, 18:26:22z, and 23:33:15z.

An XS Invalid Stream identification occurred 00-070 at 03:10:44z, due to VIRS.

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem is operating nominally.

TSMs #31 and 32, which monitor the end of day SOC telemetry, were disabled on 00-066 due to the slowly dropping SOC during this Beta range (between -20 and 20). On 00-070 the C/D level was changed to 1.02 (from 1.025) and auto-SPRU was disabled to restore the SOC counters. The FOT and Power AETD engineers will continue to monitor the battery C/D.

The PSIB software patch will be uplinked by the end of the month.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem performed nominally during this period.

Unpredicted MI was experienced for 22 seconds on 00-072 at 22:16:26z (ER #159). There was no impact to operations.

SPACECRAFT INSTRUMENTS

CERES

AB async testing continued this week, expanding the angles to 150° - 210°. Stalling still occurs when traveling from CT to angles greater than the 180° position (POSB), but is cleared when commanded to angles less than that (POSA). During testing, SHORT elevation-scanning science data was collected for approximately one orbit on 00-070. Testing will continue next week.

LIS

LIS performed nominally during this time period.

PR

PR performed nominally during this time period.

The list of Internal Calibration times over Australia in which PR was not radiating is below:

2000/066:13:59:24 - 14:01:31z
2000/067:12:48:07 - 12:50:19z
2000/068:05:07:45 - 05:10:34z
2000/068:13:10:43 - 13:12:50z
2000/069:11:58:56 - 12:01:08z
2000/070:04:16:41 - 04:21:46z
2000/070:12:21:56 - 12:23:48z
2000/071:11:10:15 - 11:12:26z
2000/072:03:28:11 - 03:32:49z
2000/072:09:58:38 - 10:00:52z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed nominally during this time period.

Two routine Solar Calibrations were performed on 00-071 at 01:07:36z and 02:39:08z.

GROUND SYSTEM

Archiving to the backup Oracle server (string 2) has not yet been enabled. Tape backups continue to be performed three times per week.

Release 8.1 will be re-tested by the FOT and will be implemented on all strings pending successful testing.

Event Reports

#159: Transponder Command Lock lost for 22 seconds - see RF section.

Generic Late Acquisition Reports (for TTRs 19639)

There were no generic late acquisitions during this timeframe.

New Anomaly

No new anomaly reports occurred during this timeframe.

Recurring Open Anomalies

#79: CERES To Stall during Azimuth Rotation (See the CERES section).

Prepared by:
Ed Weidner
TRMM Systems Engineer

Approved by:
Lou Kurzmiller
FOT Manager